MISSION EN INDE

6 – 12 novembre 2002

INRA – CIRAD

Mission INRA-CIRAD en Inde

6 – 12 novembre 2002

Participants : Ph.Ferlin – DRI – INRA
A.Derevier – DRE – CIRAD
S.Kaushik – Département HyFS – INRA
P.Durand – DRE – CIRAD

Objectif : préparer un séminaire franco-indien en recherche agronomique et identifier des partenaires institutionnels pour le développement de coopération avec l'INRA et le CIRAD

Contexte

Cette mission a été décidée pour mieux préparer le séminaire qui devrait se tenir au début du mois d'avril 2003 et pour sensibiliser les partenaires indiens à notre volonté de bâtir progressivement un partenariat scientifique avec eux.

Du fait de l'absence des dirigeants de l'ICAR (Indian Centre for Agriculture Research), la mission s'est focalisée sur les autres partenaires potentiels, une seconde mission devant rencontre l'ICAR au cours du mois de novembre.

La mission a été organisée et menée conjointement par l'INRA et le CIRAD, qui ont décidé d'aborder les coopérations avec ce pays de façon très coordonnée.

Déroulement

Mercredi 6 novembre
Paris – Delhi

Jeudi 7 novembre 02
Visite au Service de Coopération et d'Action Culturelle de l'Ambassade de France
Réunion de travail avec le CEFIPRA (Centre Franco-Indien pour la Promotion de la Recherche Avancée)
Réunion de travail avec le CSIR (Centre for Scientific and Industrial Research)
Delhi – Chennai (Madras)

Vendredi 8 novembre
Visite du CIBA (Central Institute for Brackishwater Aquaculture) de l'ICAR
Réunion de travail au CLRI (Central Leather Research Institute) du CSRI
Réunion de travail avec l'Université d'Anna et signature du Mémoire d'Entente entre l'Université d'Anna et l'INRA.

Samedi 9 novembre
Chennai – Puna
Visite de la BAIF Development Research Foundation

Dimanche 10 novembre
Puna – Delhi

Lundi 11 novembre
Visite et réunion de travail à l'IARI (Indian Agriculture Research Institute) de l'ICAR
Réunion de conclusion avec le SCAC et l'Attaché agricole de l'Ambassade de France.

Impression générale

L'Inde se situe ~~pas~~ à ***un niveau de développement beaucoup plus faible que la Chine***, et le différentiel de PNB global, encore plus celui par habitant a tendance à se creuser d'année en année (prés de 4000 $ de PNB par habitant en Chine, contre 2400 en Inde, en équivalent de pouvoir d'achat). Le PNB global de l'Inde et de la Chine étaient identiques en 1980, et le PNB par habitant l'était aussi en 1990.
L'Inde s'est ***moins ouverte que la Chine*** au développement de l'économie mondiale : elle n'a reçu que 18 Mds de $ en 20 ans d'investissements étrangers (contre 335 Mds $pour la Chine) et son commerce extérieur ne représente que 10 % du commerce extérieur chinois.

La ***différence entre catégories de population*** a aussi tendance à s'accroître : la population rurale ne semble pas avoir changé de condition durant les 30 ou 40 dernières années, la population pauvres des banlieues urbaines s'est accrue, et seuls les 10 % de population les plus favorisés profitent du développement économique

L'Inde, outre ses divisions linguistiques et le poids de ses traditions culturelles et religieuses, présente une ***lourdeur de l'appareil administratif*** encore très présente, ralentissant d'autant le développement. A la lourdeur de l'administration nationale se superpose celle liée à l'autonomie des Etats, notamment en matière de taxes, qui freine le commerce inter-Etats. Dans le domaine de la recherche, ceci présente deux conséquences : la nécessité ***de négocier au plus haut niveau*** pour les coopérations avec des équipes d'organismes nationaux, et l'obligation de nouer en parallèle des liens avec des organismes (universités) plus dispersés au niveau des Etats, mais offrant souvent des partenariats de qualité supérieure et disposant d'appuis financiers importants au niveau de ces Etats.

Un point fort des coopération scientifiques avec l'Inde est que ***la recherche reste une priorité*** pour les pouvoirs politiques au niveau national, mais aussi au niveau de certains Etats (notamment du sud).

Une coopération avec l'Inde doit donc s'appuyer d'abord sur ***l'intérêt scientifique*** que l'on y trouve, certaines équipes se situant au niveau d'excellence mondial. En revanche, une orientation vers l'application et le développement est difficilement visible, à l'exception des travaux menés par la BAIF, ONG de recherche-développement, qui a une vision claire tant des objectifs de recherche, que de ceux du développement. La BAIF a été le premier partenaire de l'INRA, qui a formé 25 à, 30 de ses cadres, et cet investissement peut être valorisé dans une coopération renouvelée avec l'INRA et le CIRAD.

Principales conclusions

Séminaire

L'organisation détaillée du séminaire franco-indien n'était pas à proprement parlé l'objectif principal (une mission organisée fin novembre ayant comme priorité cet objectif), mais nous souhaitions vérifier l'intérêt d'un gamme diversifiée de partenaires indiens et nous assurer du concours de l'ambassade.

Il nous est apparu que les partenaires indiens rencontrés étaient ***intéressés par une participation à ce séminaire***, l'ouverture sur l'Europe restant un de leurs axes de coopération. D'autre part, la mission s'est assurée de l'appui éventuel du CEFIPRA, organisme de financement franco-indien des projets de coopération scientifique, et de notre ambassade, pour assurer les liaisons avec les organismes indiens, tant pour le séminaire lui-même que pour l'organisation des missions de terrain prévues à cette occasion.

Partenaire institutionnels

La mission a montré que parallèlement à la réactivation de notre accord avec l'ICAR, indispensable pour que les équipes scientifiques puissent coopérer, il nous faut aussi nouer des relations plus étroites avec deux autres acteurs à l'échelle nationale :

- le ***CSIR***, qui regroupe plusieurs centres de recherche axés sur des problématiques intéressant l'INRA et le CIRAD (et ayant déjà des coopérations avec nos chercheurs)
- la ***BAIF***, dont la double vocation de recherche (y compris assez amont) et de transfert vers le développement intéresse autant l'INRA que le CIRAD.

Nous devons donc proposer une première mouture d'accord (qui peut être conjointe INRA-CIRAD) ces deux partenaires, afin de pouvoir éventuellement le finaliser en avril prochain.

Si la qualité des travaux de la BAIF nous a semblé assez homogène (et de bon niveau), il n'en est cependant pas de même de celles des Centres dépendant des autres Institutions nationales. La prudence s'impose donc dans les échanges envisageables, notamment en matière d'accueil de chercheurs, de montage de projets, d'envoi de scientifiques. Ceci justifie déjà de disposer d'une ***présence permanente*** en Inde capable d'éclairer l'INRA et le CIRAD sur ces Centres. D'autre part, le nombre important d'Universités, qui ont aussi des capacités de recherche non négligeables, et qui sont souvent plus facile à aborder sur le plan institutionnel conforte aussi l'idée de mettre en place un dispositif multipartenarial qui devra s'appuyer sur une capacité de veille et de guidage sur place.

Un autre partenaire important est le ***CEFIPRA***, qui finance un nombre important de coopération scientifiques entre équipes indiennes et françaises (en 2001-2002, on relève ainsi 6 projets INRA et 2 CIRAD financés par le CEFIPRA, d'autres devant être approuvés pour 2003). Des discussions que nous avons eues avec son Directeur, il est apparu que la nomination d'un ***membre représentant la recherche agronomique*** au sein du Conseil Scientifique (chargé de la sélection des projets) pourrait être envisagée..

Priorités de recherche

La courte durée de la mission n'a pas permis évidemment d'identifier de façon précise les priorités de recherche que les organismes indiens peuvent avoir défini. Cependant, il nous est

apparu qu'un certain nombre de thèmes avaient été avancés pour de futures coopérations avec les organismes français :

- la ***sécurité et la qualité des aliments***, notamment pour l'exportation, mais aussi pour le développement de nouvelles filières (lait, par exemple).
- Le ***rapport de l'agriculture avec l'eau***, tant au niveau de l'adaptation de plantes à la sécheresse ou à la salinité, que de la gestion des ressources en eau, ou les interactions entre eau et sol.
- La ***reforestation en milieu rural*** coordonnée avec l'activité agricole et les besoins des consommateurs.
- Le développement d'outils issus de la ***génomique*** (le débat sur les OGM commence aussi à prendre de l'importance en Inde), pour l'amélioration des plantes et des animaux (bovins et poissons).
- ***L'évaluation des programmes de recherche et des méthodes de transfert*** sur les systèmes agricoles et le développement.

Si le séminaire prévu en avril prochain va se focaliser sur 2 ou 3 de ces thèmes (eau, sécurité et qualité des aliments), les rencontres prévues lors de cette mission d'avril, ou organisées séparément devraient permettre de mieux appréhender l'ensemble des thèmes pouvant donner lieu à une coopération scientifique motivant les équipes des deux cotés.

Conclusions

Cette courte mission a montré que l'approche de l'Inde va se montrer encore plus difficile pour les instituts de recherche français que celle de la Chine, du fait de l'importance des diversités sociales, économiques, culturels, politiques, etc. Ceci conforte l'idée que :

- cette ***approche doit être très progressive***, non seulement sur le plan scientifique mais aussi sur les problèmes de propriété intellectuelle ou de valorisation,
- elle ne peut être envisagée que de façon très ***concertée*** entre les divers partenaires français
- elle nécessitera d'avoir une ***dispositif local de veille*** et de guidage
- elle devra s'appuyer sur ***un dialogue approfondi entre chercheurs et responsables scientifiques*** des deux cotés (séminaires, accueils et visites),
- elle devra disposer de ***moyens plus importants*** mais aussi plus ciblés que ceux mis en œuvre avec d'autres pays.

Si l'Inde n'est pas appelée à jouer un rôle primordial dans l'économie mondiale d'ici à plusieurs années, elle devrait en revanche accroître sa présence scientifique dans plusieurs des domaines qui concernent l'INRA ou le CIRAD. Ceci justifie que ces organismes favorisent la naissance de coopérations avec ce pays, non seulement pour en tirer des bénéfices sur le ***plan scientifique*** mais aussi pour servir de ***base à une veille plus élargie sur ce pays***.

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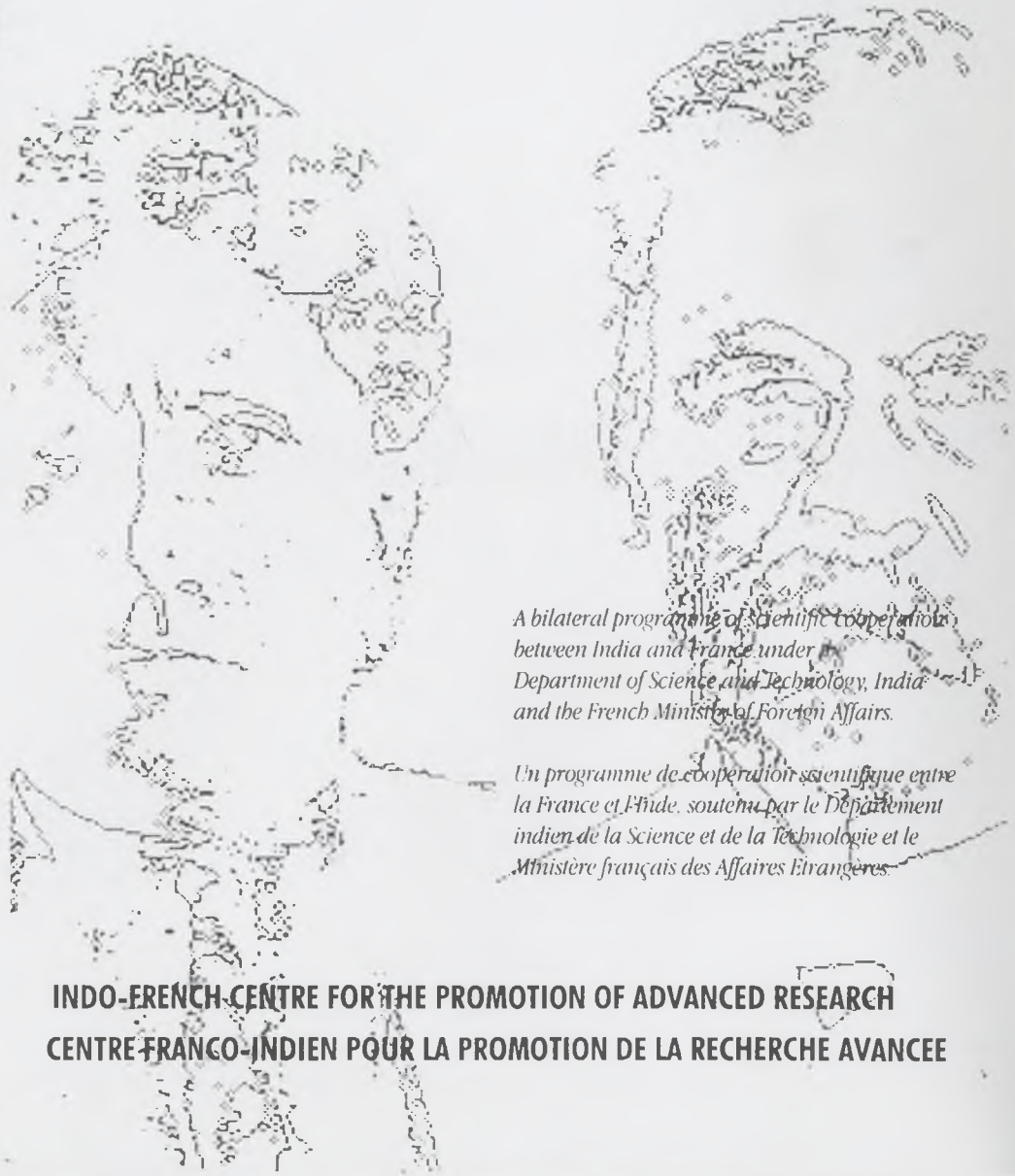


A bilateral programme of scientific cooperation between India and France under the Department of Science and Technology, India and the French Ministry of Foreign Affairs.

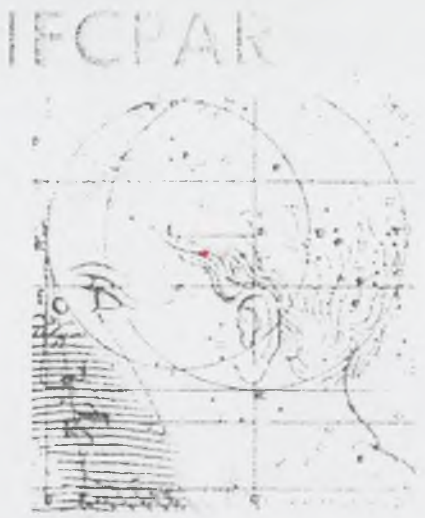
Un programme de coopération scientifique entre la France et l'Inde, soutenu par le Département indien de la Science et de la Technologie et le Ministère français des Affaires Etrangères.

INDO-FRENCH CENTRE FOR THE PROMOTION OF ADVANCED RESEARCH
CENTRE FRANCO-INDIEN POUR LA PROMOTION DE LA RECHERCHE AVANCEE

January 1997
janvier 1997

Principal Objectives

- Promotion of cooperation in advanced areas of fundamental and applied scientific research between India and France.
- Development of cooperation through identification of scientists and scientific institutions of the two countries likely to cooperate in a profitable way.
- Provision of assistance in the form of grants and equipment as well as other appropriate means of support for the pursuit of advanced research.
- Organisation of workshops / seminars and other types of fora on topics of mutual interest.



Principaux Objectifs

- Promotion de la coopération franco-indienne dans les secteurs de pointe de la récherche fondamentale et appliquée.
- Développement de cette coopération par l'identification des chercheurs et des organismes de recherche qui, en France et en Inde, sont susceptibles et désireux de collaborer utilement.
- Assistance aux projets de recherche sous forme de dons de matériel, d'allocation de crédits et/ou de mise en place de tout moyen approprié pour la conduite de ces projets.
- Organisation de manifestations scientifiques conjointes sur des thèmes d'intérêt mutuel.

Governing Body

IFCPAR is managed by a governing body consisting of five Indian members and five French members, nominated by the respective Governments. The Secretary, Department of Science and Technology, Government of India and the Director, Directorate for the Development of Scientific and Technical Cooperation at the French Ministry of Foreign Affairs, are the Co-Chairmen of the governing body.

Scientific Council

A scientific council, with four eminent scientists from each of the two countries as its members, identifies thrust areas of research, selects research themes for support by the centre and evaluates proposals for joint research and other scientific activities as may be desired by the governing body.

Director

The Director of IFCPAR is a scientist, who is an Indian national appointed by the governing body. He is responsible for the implementation of the decisions of the governing body and is in charge of the normal activities and obligations of the centre.

Conseil d' Administration

Il est composé de dix membres - cinq Français et cinq Indiens - représentant les administrations des deux pays. Le Directeur de la Coopération Scientifique et Technique du Ministère des Affaires Etrangères pour la partie française et le Directeur Général du Département de la Science et de la Technologie pour la partie indienne, sont les co-Présidents de ce Conseil.

Conseil Scientifique

Composé de quatre Français et de quatre Indiens, il est chargé d'identifier les secteurs de pointe, de sélectionner les thèmes de recherche, d'évaluer les projets de recherche et de mettre en place toute autre activité scientifique susceptible d'être retenue par le Conseil d'Administration.

Directeur

Le Directeur, de nationalité indienne et de formation scientifique, est nommé par le Conseil d'Administration. Il est responsable de l'application des décisions de ce Conseil et est chargé d'assurer le bon fonctionnement du Centre.

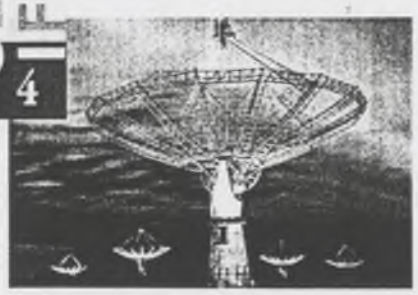
Research Projects

The Scientific Council identifies, from time to time, thrust areas for being supported by the centre. Proposals for collaborative research should normally be in topics which fall under any of the thrust areas. The list of thrust areas is reviewed periodically based on evolving needs and interests. The present list is as follows :

Pure and Applied Mathematics; Theoretical Physics

Theoretical Computer Science; Natural Language Processing; Neural Networks; Artificial Intelligence; Computer Systems

Cellular and Molecular Biology / Genetics; Genetic Engineering; Biotechnology including applications to Medicine and Agronomy



Medical Sciences: Immunology; Virology; Cancer Biology; Neurobiology; Ageing; Genetic Disorders; New Drug Development; Biomedical Engineering

Chemistry of Natural Products; Agro-chemicals

Catalysis - Science and Engineering

Liquid Interface Science

Material Science and Engineering; Advanced Ceramics; Composites; Polymers; Rare Earths

Environmental and Ecological Sciences; Biosphere

Astrophysics; Radioastronomy

Geophysics - Geosphere

Remote Sensing

Water Resources

Semiconductor Physics; Optoelectronics; Microelectronics

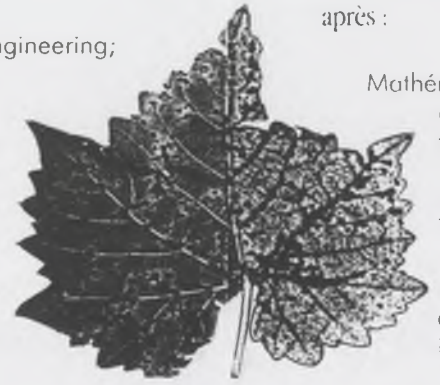
Separation Science and Technology

Workshops and Seminars

IFCPAR also organises Indo-French Workshops / Seminars on topics of current interest. Proposals for organisation of workshops/seminars may be submitted in the prescribed proforma which can be obtained from the centre.

Programmes de Recherche

Le Conseil Scientifique du CEFIPRA définit périodiquement les secteurs de pointe prioritaires pour les deux pays. En règle générale, les propositions de projets conjoints doivent concerner les secteurs identifiés. La liste est revue régulièrement selon l'évolution des besoins et des secteurs d'intérêt. Leur liste actuelle est rappelée ci-après :

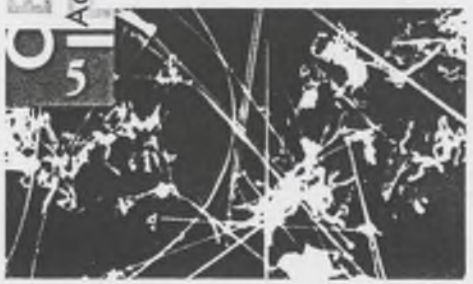


Mathématiques pures et appliquées; Physique théorique

Informatique théorique; Traitement des langages naturels; Réseaux neuronaux; Intelligence artificielle; Systèmes informatiques

Biologie et Génétique cellulaires et moléculaires; Génie génétique; Biotechnologies, y compris les applications à la médecine et à l'agronomie

Sciences médicales : Immunologie; Virologie; Biologie des cancers; Neurobiologie; Vieillissement; Anomalies génétiques; Développement de nouveaux médicaments; Génie biomédical



Chimie des substances naturelles; Agrochimie

Science et ingénierie de la catalyse

Interfaces liquides

Science et ingénierie des matériaux; Céramiques avancées; Composites; Polymères; Terres rares

Sciences de l'Environnement et Ecologie; Biosphère

Astrophysique et radioastronomie

Géophysique; Géosphère

Télédétection

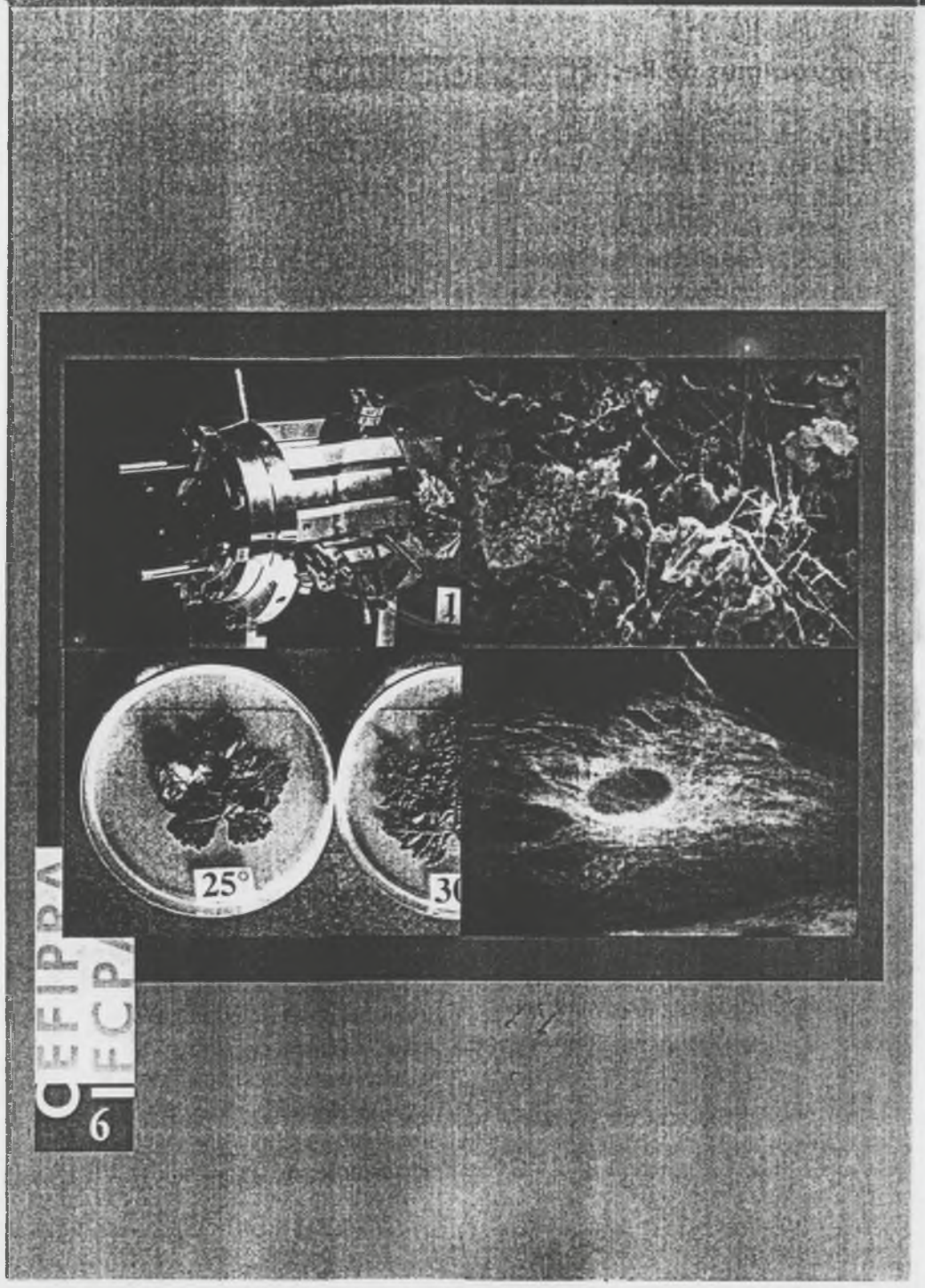
Ressources en eau

Physique des semi-conducteurs; Optoélectronique; Microélectronique

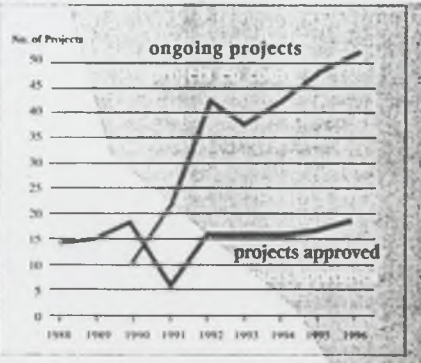
Science et technologie des séparations

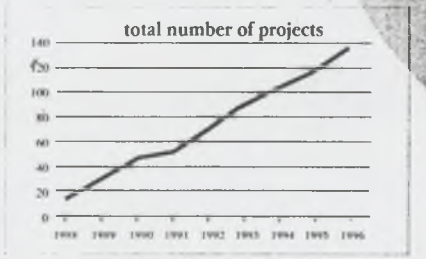
Manifestations Scientifiques

Le CEFIPRA organise également des séminaires et des ateliers scientifiques franco-indiens en Inde et en France, sur des sujets d'intérêt courant. Les formulaires de demande d'organisation de ces manifestations scientifiques sont disponibles auprès du Centre.



Achievements
Réalisations





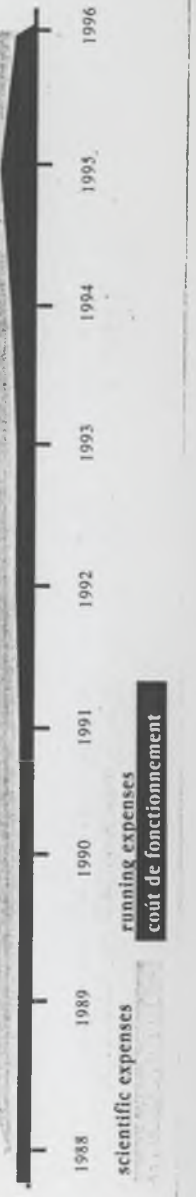
360 research proposals evaluated
360 projets de recherche évalués

136 research projects approved; 54 completed; 52 under implementation
136 projets de recherche approuvés; 54 achevés; 52 en cours

26 Indo-French seminars organised
26 séminaires franco-indiens organisés

350 articles published in international scientific journals
350 articles publiés dans des revues scientifiques internationales

900 exchange visits of Indian and French specialists
900 spécialistes français et indiens échangés



Linking Research and Industry

While continuing programmes in the area of Scientific research, IFCPAR is embarking on projects of applied research / industrial research involving partners from both research and industry.

Vers la Recherche Appliquée

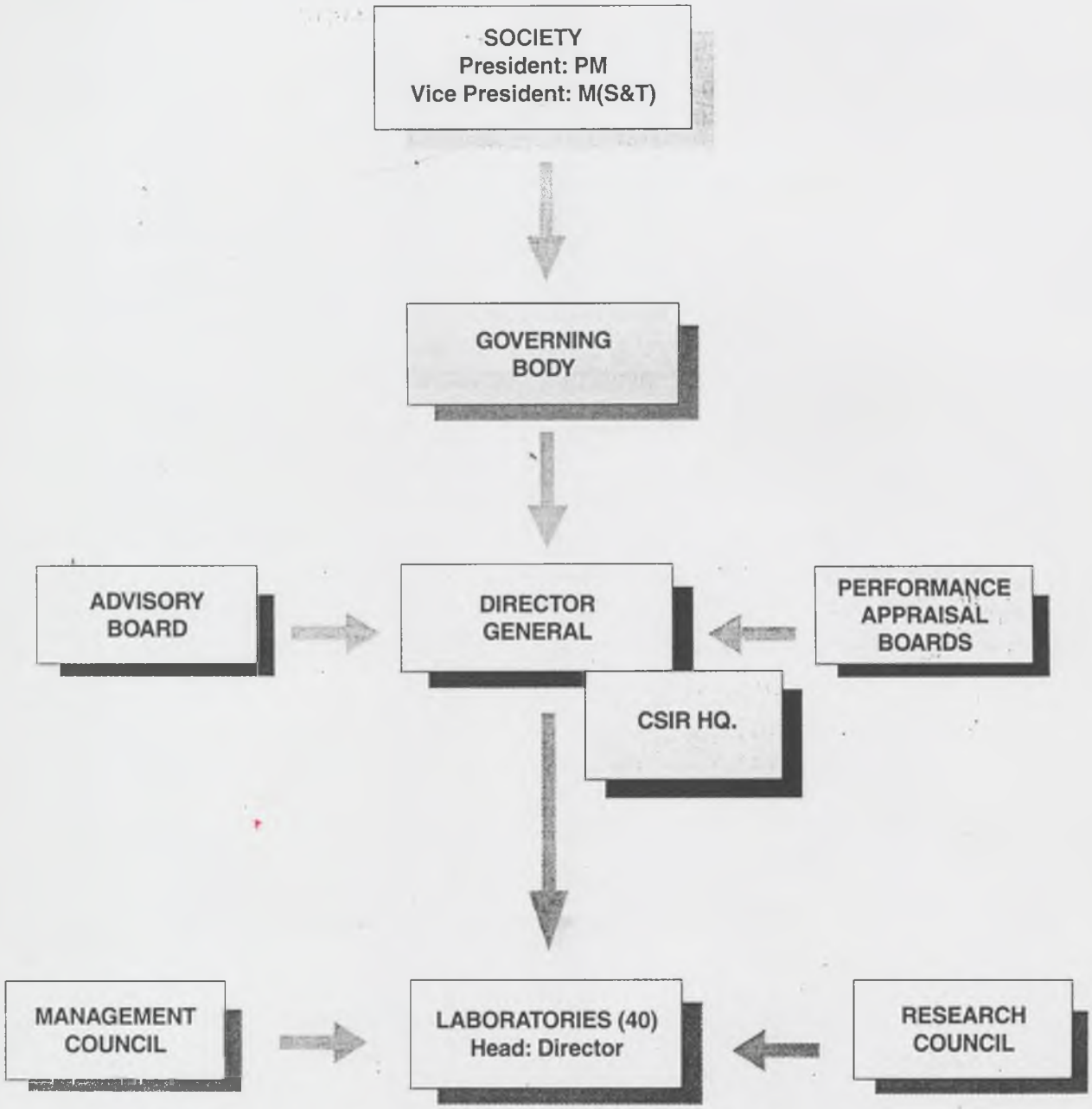
Tout en poursuivant ses activités de recherche scientifique, le CEFIPRA soutient désormais des projets de recherche appliquée réunissant des partenaires scientifiques et industriels.

CSIR

ANNUAL REPORT
2000-2001

Council of Scientific & Industrial Research
New Delhi

CSIR
Organisational Structure



PRESIDENT : SHRI ATAL BIHARI VAJPAYEE
VICE-PRESIDENT : PROF. MURLI MANOHAR JOSHI
DIRECTOR GENERAL : DR. R. A. MASHELKAR

CSIR ESTABLISHMENTS

CBRI	Central Building Research Institute, Roorkee - 247 667
CBT	Centre For Biochemical Technology, Delhi - 110 007
CCMB	Centre for Cellular and Molecular Biology, Hyderabad - 500 007
CDRI	Central Drug Research Institute, Lucknow - 226 001
CECRI	Central Electrochemical Research Institute, Karaikudi - 623 006
CEERI	Central Electronics Engineering Research Institute, Pilani - 333 031
CFRI	Central Fuel Research Institute, Dhanbad - 828 108
CFTRI	Central Food Technological Research Institute, Mysore - 570 013
CGCRI	Central Glass and Ceramic Research Institute, Calcutta - 700 032
CIMAP	Central Institute of Medicinal & Aromatic Plants, Lucknow - 226 016
CLRI	Central Leather Research Institute, Madras - 600 020
CMERI	Central Mechanical Engineering Research Institute, Durgapur - 713 209
CMRI	Central Mining Research Institute, Dhanbad - 826 001
CRRI	Central Road Research Institute, New Delhi - 110 020
CSIO	Central Scientific Instruments Organisation, Chandigarh - 160 020
CSMCRI	Central Salt & Marine Chemicals Research Institute, Bhavnagar - 364 002
IHBT	Institute of Himalayan Bioresource Technology, Palampur - 176 061
IICB	Indian Institute of Chemical Biology, Calcutta - 700 032
IICT	Indian Institute of Chemical Technology, Hyderabad - 500 007
IIP	Indian Institute of Petroleum, Dehradun - 248 005
IMT	Institute of Microbial Technology, Chandigarh - 160 036
INSDOC	Indian National Scientific Documentation Centre, New Delhi - 110 067
ITRC	Industrial Toxicology Research Centre, Lucknow - 226 001
NAL	National Aerospace Laboratories, Bangalore - 560 017
NBRI	National Botanical Research Institute, Lucknow - 226 001
NCL	National Chemical Laboratory, Pune - 411 008
NEERI	National Environmental Engineering Resarch Institute, Nagpur - 440 020
NGRI	National Geophysical Research Institute, Hyderabad - 500 007
NIO	National Institute of Oceanography, Goa - 403 004
NISCOM	National Institute of Science Communication, New Delhi - 110 012
NISTADS	National Institute of Science Technology and Development Studies, New Delhi - 110012
NML	National Metallurgical Laboratory, Jamshedpur - 831 007
NPL	National Physical Laboratory, New Delhi - 110 012
RRL,BHO	Regional Research Laboratory, Bhopal - 462 026
RRL,BHU	Regional Research Laboratory, Bhubaneshwar - 751 013
RRL,JM	Regional Research Laboratory, Jammu Tawi -180 001
RRL,JT	Regional Research Laboratory, Jorhat - 785 006
RRL,TVM	Regional Research Laboratory,Thiruvananthapuram - 695 019
SERC,G	Structural Engineering Research Centre, Ghaziabad – 201 002
SERC,M	Structural Engineering Research Centre, Chennai- 600 113

OUR PERFORMANCE IN 2000-2001

1.	**Science Output**	Numbers	
	* Papers Contributed		
	• Number	1667	(1699)*
	• Average Impact Factor	1.552	(1.538)
	* Patents		
	• Filed in India	410	(377)
	• Filed abroad	452	(199)
	• In force in India	657	(636)
	• In force abroad	249	(169)
2.	**Technological Output**	Numbers	
	* New Knowhow Licensed	36	(36)
	* Licensing agreements executed	140	(130)
3.	**National S&T Human Resource Development**	Numbers	
	* Research Fellows/Associates supported	5247	(3906)
	* Emeritus Scientists in position	123	(117)
	* Pool Scientists (SRAs) in position	320	(410)
	* Research Schemes supported	750	(670)
4.	**Contribution to Economy**	Rs. Crore	
	* Industrial production based on CSIR Knowhow	4800	(4400)
	* Saving in productivity accruing through CSIR R&D efforts	225	(225)
5.	**Resource Mobilisation**	Rs. Crore	
	* External Cash Inflow	245	(252)
	* Contract value of projects on hand		
	• Contract Research	350	(375)
	• Consultancy	70	(75)

* Figures parenthesized correspond to the previous year 1999-2000

OUR RESOURCE BASE

1.	**Infrastructural**	Number
	* Laboratories/Institutes	40
	* Extension/ Field/ Regional/ Polytechnology Transfer Centres	80
2.	**Human**	
	Total Staff	21,228
	* Total S&T Staff	15,780
	• Scientists (Group IV)	5,052
	• Technical (Group III+V)	3,241
	• Technical (Group II+I)	7,487
	* Total Administrative & non-technical	5,448
3.	**Financial**	
		Rs. Crore
	* Government Budgetary Support	877.88
	• Government plan allocation	303.00
	• Government non-plan allocation	574.88
	* Extra budgetary resource generation	
	• From Contract R&D and Consultancy	229.29
	• Miscellaneous receipts (non-R&D)	42.83
	• Laboratory reserves	73.49

Université d'Anna - Chennai

கிண்டி பொறியியல் கல்லூரி
LEGE OF ENGINEERING, GUINDY

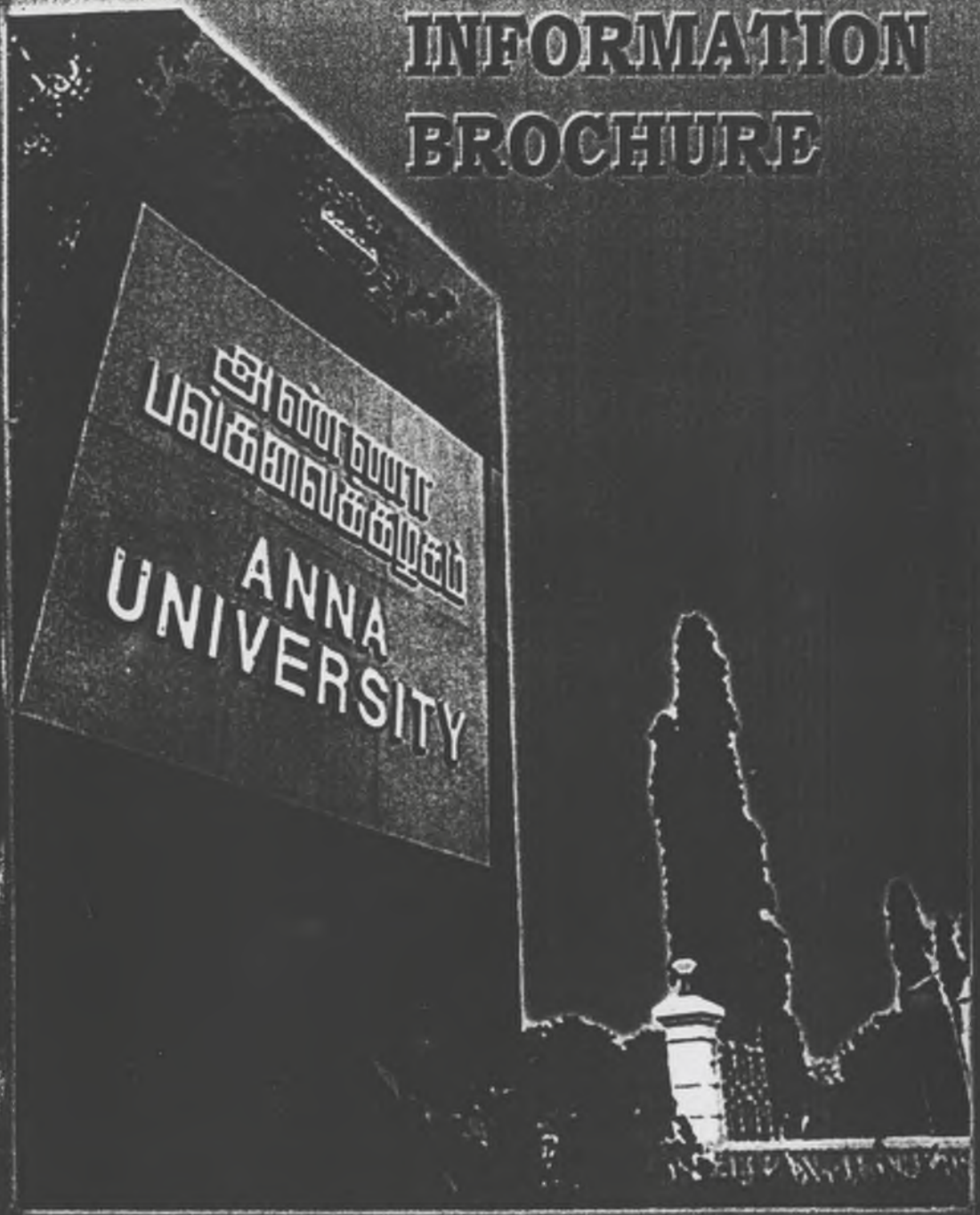
சென்னை தொழில் நுட்ப நிறுவன முதன்மை கட்டடம்
MADRAS INSTITUTE OF TECHNOLOGY

அண்ணா பல்கலைக்கழக அலுவலக வளாகம்
ANNA UNIVERSITY ADMN. BUILDING

ழகப்பா தொழில் நுட்ப கல்லூரி
PPA COLLEGE OF TECHNOLOGY

கட்டிடக்கலை மற்றும் திட்டமிடுதல் பள்ளி
SCHOOL OF ARCHITECTURE & PLANNING

INFORMATION BROCHURE



SARDAR PATEL ROAD, CHENNAI 600 025. TAMILNADU. INDIA.

ANNA UNIVERSITY

Chennai - 600 025.

VISION STATEMENT

We at **ANNA UNIVERSITY** *shall strive constantly*

- *to raise the* Quality of Education *and* to be an effective human resource *development institution under all changing conditions.*
- *to contribute to the* Growth of the Engineering Profession *maintaining highest ethical and professional standards.*
- *to serve the community for its* Enrichment and Advancement

To that not only

We retain our National Eminence *but also be recognised as a World class centre of learning in the field of Science, Engineering and Technology.*

In the pursuit of this vision, we shall discharge our duties and obligations

● *to Students-Our prime assets* ● *to Profession-Our customer*
● *to Staff - Our means*

INFORMATION BROCHURE

ANNA UNIVERSITY

CHENNAI - 600 025.

ABOUT THE UNIVERSITY 1

PREAMBLE

Anna University, was established on 4th September 1978 as a unitary type of University. It offers higher education in Engineering, Technology and allied Sciences relevant to the current and projected needs of the society. Besides promoting research and disseminating knowledge gained therefrom, it fosters co-operation between the academic and industrial communities. The University was formed by bringing together and integrating the two well-known technical institutions in the city of Chennai viz., the College of Engineering, Guindy (CEG) and the Madras Institute of Technology, Chromepet (MIT) and three Technological Departments of the University of Madras situated in the Alagappa College of Technology(ACT) besides the School of Architecture and Planning (SAP) of the University of Madras.

Situated at the southern part of the city of Chennai, the University's main campus extends over 100 hectares abutting the Adyar River on the North and Sardar Patel Road on the South. The Madras Institute of Technology at Chromepet constitutes the second campus of the University which extends over 20 hectares. Both the campuses have a variety of buildings serving the various needs of the University community. The MIT which was started on 18th July 1948 celebrated its Golden Jubilee year during 1998-99. A third campus extending over 80 hectares is located at Taramani near the Instronic campus, Adyar. SPIC Bioprocess Laboratory is located at present in this campus and a few more centres of advanced studies, like Building Technology Centre, Sugar Research Institute, Mechatronics Institute, Enterprenuership Development Park and Convention Centre will also be housed there in future.

AUTHORITIES

As per the Anna University Act, the following are the Authorities:

1. Syndicate
2. Academic Council
3. Finance Committee
4. Faculties
5. Boards of Studies (one for each faculty)

FACULTIES

The University has the following faculties :
Faculty of Civil Engineering
Faculty of Mechanical Engineering
Faculty of Electrical Engineering
Faculty of Technology
Faculty of Engineering(MIT)
Faculty of Architecture and Planning
Faculty of Science and Humanities

Each faculty is supported by a team of well-qualified faculty members and has well-equipped laboratories. There are 17 departments, 16, centres 3 Institutes & 4 Schools in the University as detailed below:

DEPARTMENTS/SCHOOLS

Department of Civil Engineering
Department of Mechanical Engineering
Department of Printing Technology
Department of Mining Engineering
Department of Management Studies
Department of Chemical Engineering
Department of Textile Technology
Department of Leather Technology
Department of Aeronautical Engineering
Department of Automobile Engineering

Department of Production Technology
Department of Mathematics
Department of Physics
Department of Chemistry
Department of Humanities and Social Sciences
Department of Electronics Engineering
Department of Instrumentation Engineering
School of Electrical and Electronics Engineering
School of Electronics and Communication Engineering
School of Computer Science and Engineering
School of Architecture and Planning

CENTRES/INSTITUTES

Centre for Appropriate Technology
Centre for Automotive Research and Training
Centre for Bio-Technology
Centre for Catalysis
Centre for Disaster Mitigation and Management
Centre for Environmental Studies
Crystal Growth Centre
Centre for Human Settlements
Centre for Laser Technology
Centre for Medical Electronics
Centre for New and Renewable Sources of Energy
Centre for Water Resources
University Sophisticated Instrumentation Centre
Anna University - PPST Centre for Traditional Science and Technologies of India
AU-KBC Centre for Internal & Telecom Technologies
Rubber and Product Testing & Development Facility Centre
AU-FRG Institute for CAD/CAM
Institute of Remote Sensing
Institute of Ocean Management

CENTRAL FACILITIES AND SERVICES

Anna University Science and Technology Park & Hobby Centre
Anna University TVS Centre for Quality Management
Audio Visual Research Centre
Building Technology Centre
Builders Training Centre
Central Workshop
Centre for University-Industry Collaboration
Curriculum Development Centre
Health Centre
National Cadet Corps
National Service Scheme
National Sports Organisation
Ramanujan Computing Centre
Sports and Games facilities
Student Centre
University Library

The services offered by these centres are available to all the departments/ centres/schools/divisions in both the main and Madras Institute of Technology campuses to meet the needs of the students and faculty.

CADEMIC PROGRAMMES

The University offers 26 undergraduate degree programmes and 52 post-graduate degree programmes besides 5 post-graduate diploma programmes and M.Phil programmes in 5 disciplines. Facilities are available for M.S. / Research and Ph.D. Programme in all the faculties. The intake under e undergraduate programme is about 950 students and under the ostgraduate programme including the P.G. Diploma programme is about 0 students. The University has an enrolment of nearly 5,500 students the full-time and part-time programmes, out of which about 20% percent e women students. With a sanctioned faculty strength of about 550, io of the number of students to faculty works out approximately to 10:1.

OTHER PROGRAMMES

In addition to the academic programmes, the University offers programmes, under continuing education as short courses, evening programmes, summer and winter schools, and organises seminars and symposia on topics of current interest conforming to the needs of national development activities.

The University has been exerting a major thrust in establishing Industry-Institute collaboration through consultancy services, sponsored research, training programme and testing activities. Research in emerging areas of national priority is undertaken.

A number of Departments/Centres of Anna University have earned national and international recognition.

The following Departments/Schools have been recognised as Centres for Quality Improvement Programme by the Government of India to offer M.E., M.Tech., and Ph.D. programme to teachers of other technical institutions:

- ★ Civil Engineering
- ★ Electrical and Electronics Engineering
- ★ Electronics and Communication Engineering
- ★ Computer Science and Engineering
- ★ Chemical Engineering
- ★ Leather Technology
- ★ Architecture and Town Planning

The Department of Chemical Engineering, the Centre for Water Resources and Ocean Management, the Centre for Environmental Studies, the Department of Civil Engineering, the School of Electrical and Electronics Engineering, the School of Electronics and Communication Engineering, the School of Computer Science and Engineering and the Department of Mechanical Engineering are specially supported by the University Grants Commission under the scheme of Department of Special Assistance (DSA). The Department of Chemical Engineering, the Department of Civil Engineering, the School of Electrical and Electronics Engineering, the Centre for Water Resources and the Centre for Environmental Studies are receiving special

financial assistance from the UGC under the COSIST programme. The Department of Mechanical Engineering and the School of Computer Science & Engineering are receiving special financial assistance from UGC under the DRS Programme.

Recognising the high quality work carried out in the Crystal Growth Centre, the UGC has upgraded this centre, to function as an inter-University facility for research workers from all over the country, since 1995.

OBJECTIVES

The objectives of the University are:

1. To provide facilities and offer opportunities for higher education in Engineering, Technology and allied Sciences by instruction, training, research, development and extension, and by such other means as the University may deem fit.

2. To devise and implement a programme of education in Engineering, Technology and allied Sciences that are relevant to the current needs of the society, alive to the long term requirements, and responsive to the anticipated changes and developments, in terms of breadth of diversity and depth of specialisation.

3. To further advancement of knowledge in Engineering, Technology and allied Sciences, to promote research to disseminate and advance the knowledge thereon for the betterment of society and to bring about a widespread awareness of the tools and methods continuously generated by the advances in Engineering, Technology and Allied Sciences.

4. To serve as a centre for fostering cooperation and exchange of ideas between the academic and research community on the one hand and the industrial and Government employers on the other to promote entrepreneurship among the students.

TATUS

he Anna University, which is of the unitary type, is a member of the ssociation of Indian Universities and the Association of Commonwealth niversities.

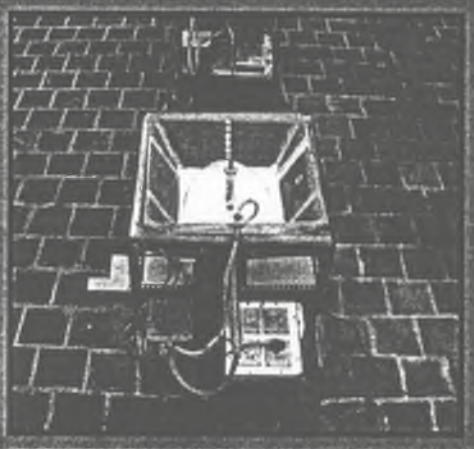
MEMBERSHIP OF THE UNIVERSITY

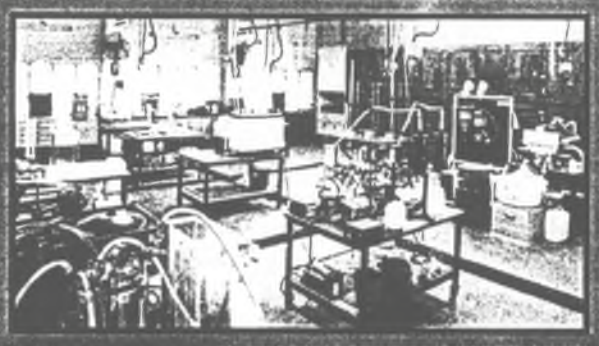
The University is open to all without discrimination of sex, race or religion. Recognition of the examinations of other Universities is decided in each case by the Syndicate. Foreign nationals seeking admission in this University should apply through the Ministry of Human Resources Development, Government of India, New Delhi.

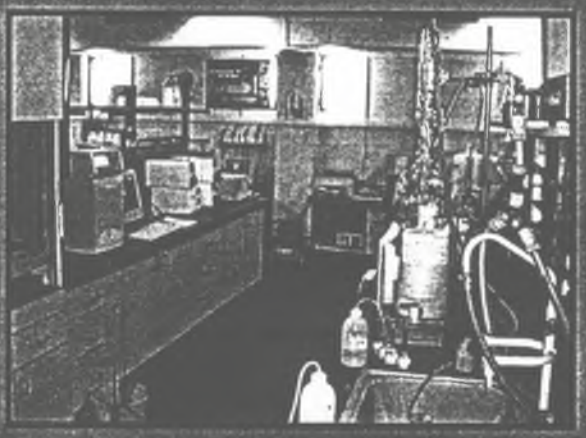
IMPORTANT INFORMATION

Medium of Instruction	:	English
Address	:	Anna University, Sardar Patel Road, Chennai - 600 025
Railway Station	:	(i) Chennai Central, Chennai-600 003 14 k.m. from the Main campus 29 k.m. from the MIT campus 18 k.m. from the Taramani campus (ii) Chennai Egmore, Chennai-600 008 14 k.m. from the Main campus 29 k.m. from the MIT campus 18 k.m. from the Taramani campus
Airport	:	Chennai International Airport, Chennai - 600 027 10 k.m. from the Main campus 5 k.m. from the MIT campus 14 k.m. from the Taramani campus
Seaport	:	Chennai Harbour, Chennai - 16 k.m. from the Main campus 31 k.m. from the MIT campus 19 k.m. from the Taramani campus

CES







CENTRE FOR ENVIRONMENTAL STUDIES
ANNA UNIVERSITY, CHENNAI, INDIA

Mission Statement

We at Centre for Environmental Studies shall strive constantly

- To educate the future leaders of the environmental profession and to inculcate skills and foundations for life-long learning and growth.
- To conduct research and create new knowledge as an integral part of our education programme and the continued renewal of the profession.
- To contribute towards sustainable management and utilization of natural resources, combat and reduce pollution of air, water and soil, enhance technical management knowledge and develop and promote technology for sustainable management.

Anna University

Anna University was established in 1978 to provide higher education in Engineering, Technology and Allied Sciences relevant to the current and projected needs of the society. Besides promoting research and disseminating knowledge, the University fosters co-operation between Academic and Industrial communities situated in and around Chennai. At present the University offers 33 undergraduate and 53 postgraduate degree programmes, 5 postgraduate diploma programmes and research programmes leading to M.Phil, M.S. and Doctoral Degree in several branches of Engineering/Technology and Applied Sciences. The University is supported by over 600 faculty members, catering to student strength of over 6000 out of which 27 percent are women students. The University receives grants from the State and Central Government, National and International agencies and Industrial houses. It has an extensive interaction with Indian Industries, National Research Laboratories and International Universities. This enables the University to keep pace with new developments and emerging technologies.

Centre for Environmental Studies (CES)

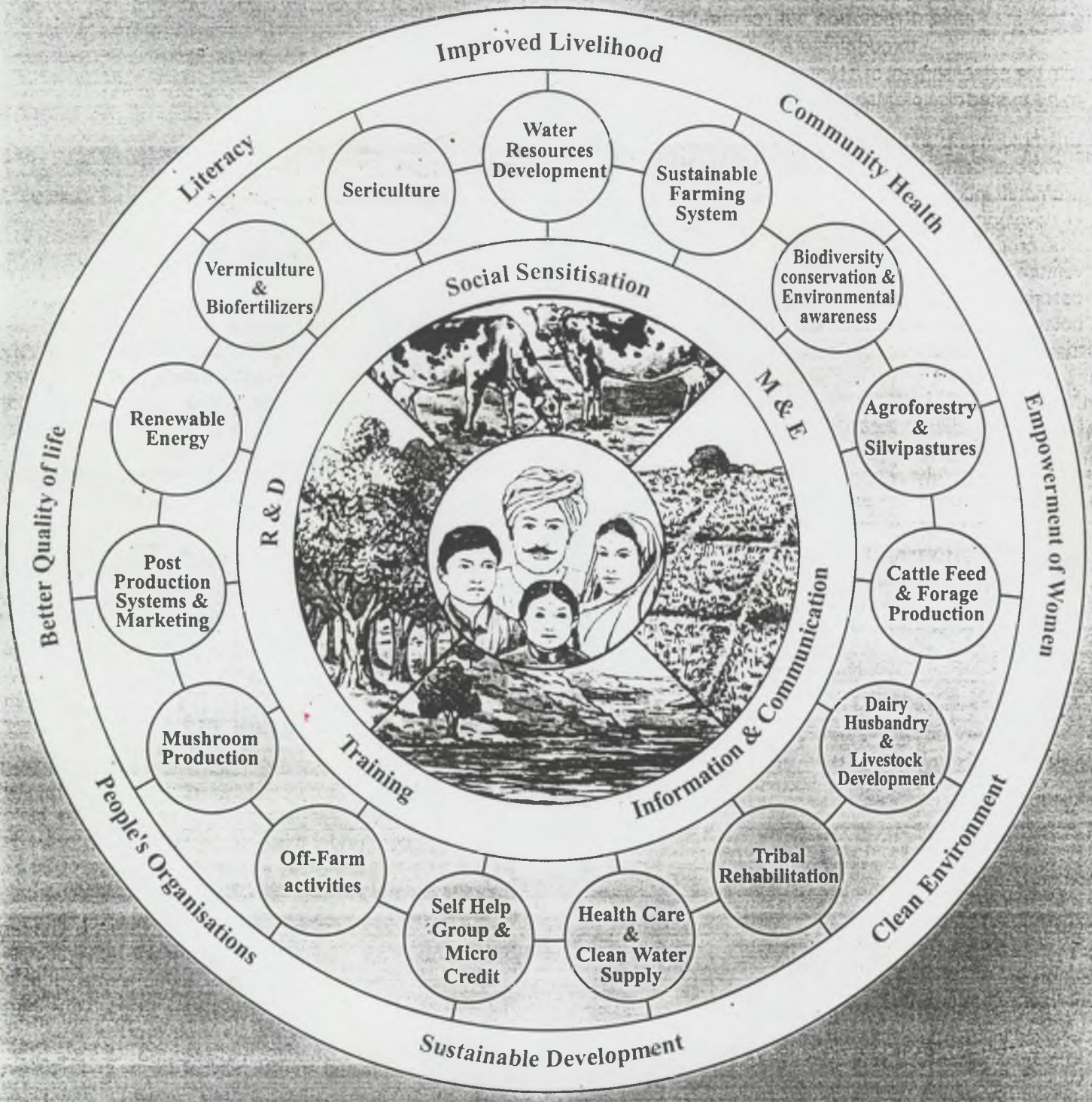
The Department of Public Health Engineering was established in the year 1955, with the assistance from the World Health Organization (WHO). It was upgraded into the Centre for Environmental Studies (CES) in 1982. The Centre has a rich tradition of teaching, continuing education, research, consultancy and extension programmes. Infrastructure facilities available at the Centre include an advanced Research Laboratory, Analytical Laboratories, Environmental Microbiology Laboratory, Unit Operations and Processes Engineering Laboratory, Waste Processing Technology Demonstration Plant, Tool Room, Computing Facility and Environmental Information Centre. To ensure uninterrupted power supply, the Centre has a 125 KVA Generator. The Centre also has a Meteo LOG TDL14 Data Logger which is a complete measurement system to detect and store meteorological data. All the laboratories in the Centre have been upgraded to International Standards under the ongoing Indo-German Project.

BAIF

BAIF DEVELOPMENT RESEARCH FOUNDATION

COMMITTED TO

SUSTAINABLE RURAL DEVELOPMENT, FOOD SECURITY AND CLEAN ENVIRONMENT



BAIF DEVELOPMENT RESEARCH FOUNDATION

BAIF Bhavan, Dr. Manibhai Desai Nagar, Warje, Pune 411029, India

Phone: 020-5231661, Fax: 5231662, E-mail: baif@vsnl.com

www.baif.com

GENESIS OF BAIF

It was March, 1946 - the dawn of Indian Independence. The brief sojourn of the Father of the Nation - Mahatma Gandhi to Urulikanchan, a backward village near Pune, marked the turning point in community development. Promotion of community health through nature cure became a reality with the establishment of a Nature Cure Centre, managed by his trusted disciple Manibhai Desai.

Unemployment, underemployment and erosion of natural resources being the root causes of poverty, Manibhai promoted income generation activities as the main plank of development. Cultivation of high yielding varieties of food crops, vegetables and fruits was his first successful venture but his successful experiments for improving non-descript cattle through cross breeding had greater potential to generate gainful self-employment for most of the poor farmers.

The encouraging response from the rural community motivated Manibhai to establish the **Bharatiya Agro Industries Foundation** (BAIF) at Urulikanchan near Pune in 1967 and, later renamed as **BAIF Development Research Foundation**, to replicate his novel programme in rural development. Presently, the organisation is professionally managed by a team of multidisciplinary experts, under the guidance of the Board of Trustees.

BAIF'S OPERATIONAL AREAS

BAIF's Operational Areas are spread over 12,000 villages in Maharashtra, Karnataka, Gujarat, Rajasthan, Uttar Pradesh, Uttaranchal, Madhya Pradesh and Andhra Pradesh states.

THE BAIF MISSION

BAIF's Mission is to create opportunities of gainful self employment for the rural families especially disadvantaged sections, ensuring sustainable livelihood, enriched environment, improved quality of life and good human values. This is being achieved through development research, effective use of local resources, extension of appropriate technologies and upgradation of skills and capabilities with community participation. BAIF is a non-political, secular and professionally managed organisation.

BAIF'S APPROACH

- Family as a Unit
- Focus on Quality of Life
- Assured Livelihood
- Women Empowerment
- Environmental Protection
- Blending Development with Research and Training
- People's Organisations

MULTIDISCIPLINARY PROGRAMME

Livestock Development

Gainful Self-Employment

Development of good quality dairy animals is a powerful tool for gainful self-employment which reaches over 1.0 million families through 841 centres. The operating cost of these centres are met from Swarnjayanti Gram Swarozgar Yojana or from Farmers' Cooperatives, service charges and other donors.

Annually, about 0.8 million cows and buffaloes mostly owned by small farmers are bred and over 200,000 female calves are born under this programme. The crossbreds come into milk production at an average age of 28-32 months and yield about 2100-2700 kg milk/lactation.

Presently, about 4.25 lakh cows and buffaloes are under milk production, contributing 0.95 million tons of milk every year. The programme has demonstrated that a family maintaining three crossbred cows can earn Rs 15000-18000 annually and come out of poverty.

BAIF has maintained an elite herd of Jersey and Holstein Friesian breeds at the Central Research Station at Urulikanchan. With a view to conserve native breeds, Gir, Sahiwal, Hallikar, Amrutmahal, Dangi and Ongole breeds of cattle, Surti, Murrah and Jafrabadi breeds of buffaloes and rams of Sirohi and Osmanabadi goats are also maintained. The Semen Freezing Laboratory certified under ISO 9002 produces over 2 million doses of frozen

semen annually. Embryo Transfer Technology for production of elite bulls and genetic conservation of indigenous breeds is the unique feature of this laboratory. With a view to improve the profitability of dairy farming without competing with foodgrain production, research on non-conventional forage and feeds has been undertaken and relevant technologies are being disseminated in the field.

Water Resources Development and Treebased Farming

Water Management

Water Resource Management is being implemented in selected village clusters in Maharashtra, Gujarat, Karnataka, Rajasthan and Uttar Pradesh. Water Resource development with innovative components such as network of farm ponds, conservation of natural springs, contour bunding and lift irrigation has been promoted to improve the agricultural productivity, particularly of degraded lands and to ease the supply of clean drinking water.

Sustainable Livelihood

Development of degraded wastelands through treebased farming systems and technical guidance and critical inputs, provided to small families, have converted their 0.5-1.0 ha unproductive land into productive orchards of mango, cashew or other fruit species. Establishment of 500-1000 multipurpose tree species on bunds and borders as windbreaks and sources of green manure, herbal medicine, fodder, fuel and timber and use of the inter-space for growing cereals and vegetables help the farmers to generate regular income and also ensures food security. To reduce the dependence on external inputs and to promote sustainable agriculture, use of biofertilisers and organic farming is being popularised. Production of biofertilisers, seeds and planting material is undertaken in various campuses.

Tribal Rehabilitation

The unique programme of developing orchards, popularly known as *'Wadi'*, on wastelands owned by the poor tribal families was launched by BAIF in Vansda area of Valsad district of Gujarat in 1982. This programme ensures the active involvement of the entire family, particularly the women. BAIF has recognised the traditional tribal custom *'Wavli'* which ensures complete authority of women over the income generated from vegetable cultivation in their backyards. Many other income generation activities have now been introduced as *'Wavli'* to broad base the programme. This programme has checked seasonal migration and ensured women's empowerment, food security, improved quality of life and a clean environment. Over 25,000 families are now able to earn a net annual income of Rs 15,000 to Rs 18,000.

This programme has been widely replicated in Maharashtra, Karnataka and Rajasthan. In Karnataka, scheduled caste families have developed their barren lands, which had remained idle for decades. In Uttar Pradesh, saline wastelands and ravines have been reclaimed to produce food crops. In Gujarat, the Narmada Project affected families have been rehabilitated in 27 villages.

Community Health

Health Care

Community Health focuses on improved health status of the family through promotion of safe drinking water, hygiene and sanitation facilities, nutritious diet, immunisation, mother and child health care, family welfare, nutrition gardens and health education. Preventive care and first level curative care are ensured through research, motivation and training of traditional midwives, local field functionaries and health guides. The use of traditional health practices, with primary treatment using a wide range of home grown herbs and alternate methods of waste disposal is also being popularised.

Empowerment of Women

Women Empowerment

With assured source of income and improved nutrition from livelihood activities, the women have been motivated to form Self Help Groups and contribute a small amount from their savings for promotion of micro enterprises, while participating in agrobased development. This has empowered a large number of rural women to play a leadership role in the society, hold prominent positions in the local government bodies and contribute to various development activities.

Renewable Energy and Environment

To conserve energy and to remove the drudgeries in the lives of rural women, use of smokeless woodstoves, training of the local pot makers to produce them, installation of family-size and community-size biogas plants for generating electricity and pumping potable water and demonstration of solar stoves and lamps, have been encouraged in the project areas. The Community Pasture Development through people's initiatives in Rajasthan has enhanced the forage production and improved the ecosystem.

BAIF has been promoting industrial greenbelts by providing technical services. The Ministry of Environment and Forests, Government of India has nominated BAIF as the Regional Resource Agency for coordinating the National Environmental Awareness Campaign in Maharashtra, Goa and Dadra Nagar Haveli.

TRAINING IN SUSTAINABLE DEVELOPMENT

Sound business management being the critical element for successful agriculture and rural development, the field functionaries and local organisations are trained at Dr. Manibhai Desai Management Training Centre (MDMTC) in Pune. Apart from tailor-made short duration training modules, practical training and demonstrations are also organised at BAIF campuses at Urulikanchan (Maharashtra), Lakkihalli (Karnataka), Vansda, Nanodra and Krishi Vigyan Kendra, Chaswad (Gujarat).

OUR FOUNDER

Dr. Manibhai Desai had dedicated his life to community development. A pioneer in initiating sustainable management of natural resources for rural upliftment through the voluntary movement in India, Manibhai breathed his last on November 14, 1993. His mission is being fulfilled by the BAIF family.

Several documentary films and books have been brought out to facilitate training and field extension activities. BAIF has been publishing a House Journal and Newsletter to share its field experiences with other organisations.

RECOGNITIONS

The State Government of Maharashtra presented the "**Adivasi Seva Sanstha**" award to BAIF in 1997. This programme launched at Dharampur, with the support of KfW was showcased at the **EXPO 2000** in Hannover, Germany and also presented at the **UNDP Forum of Ministers on Poverty and Environment** in New York in 1999, as a replicable model for poverty alleviation.

BAIF is a Public Charitable Trust recognised as a Research Institution by Indian Council of Agricultural Research and Ministry of Science and Technology, Government of India, University of Pune and South Gujarat University, Surat. The contributions made to BAIF are exempt from Income Tax under Section 35 (1) (ii) and 80 (G).

We solicit the support of donors to associate with this noble programme by providing programme support or by becoming a Patron or Associate of BAIF

BAIF TRUSTEES

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